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Arkansas Better Chance (ABC) Program Longitudinal Study 2009-2021

EXECUTIVE SUMMARY

The Arkansas Better Chance (ABC) program longitudinal study (2009-2021) reviews the changing circumstances and outcomes of participation in Pre-K services in Arkansas. The “core comparison” of this study is between ABC participants and students who had no known Pre-K participation but have similar low socio-economic household income levels. The results show that ABC participants generally have better ACT Aspire proficiency, better attendance rates in kindergarten, elementary, and secondary school, as well as lower rates of chronic absenteeism, and higher persistence compared to students of similar socioeconomic status who had no known Pre-K services.¹

The core comparison shows that, in kindergarten, the ABC group had more average days present, fewer average days absent, and fewer average days unreported for the thirteen-year study period compared to the no known Pre-K group. In FY21 the ABC group had 4.3 more days present, 0.9 fewer absences, and 3.4 fewer unreported days in kindergarten. The ABC group also showed a gain in elementary and secondary school attendance of 0.8 to 6.5 average total days present. Similarly, the core comparison shows ABC Gains in the form of lower chronic absenteeism in kindergarten for all three absenteeism calculations.

The core comparison also shows ABC gains in proficiency percentages for most years as well as lower retention rates. ABC proficiency gains ranged from 0.8% to 4.1% in English and Language Arts, 0.5% to 3.4% in Math and 0.2% to 3.9% in Science in FY21. Improved rates of retention are observed for the ABC group in all years after the first year of kindergarten when compared to the group with no known Pre-K services. However, ABC students with Direct Certification and Free meal status who are chronically absent are less likely to score proficient on assessments compared to other ABC students who are not chronically absent.

Rates of persistence also differ according to the core comparison groups. The ABC core comparison group had 3.6 to 12.2 percentage points higher in-state persistence compared to students with similar socioeconomic status who had no known Pre-K services.

The study examines changes in the type of Pre-K services used as well as changes in meal status designation for kindergarten students. Compared to a decade earlier, ABC participants in FY21 make up a larger share of DESE kindergarten enrollees and are more likely to have Direct Certification or free meal status. This data on Pre-K participation and meal status provide the context for the comparison scores that make up the bulk of the analysis.

¹ For both groups, the household socioeconomic status is accounted for by selecting only students with direct certification or free meal designation.

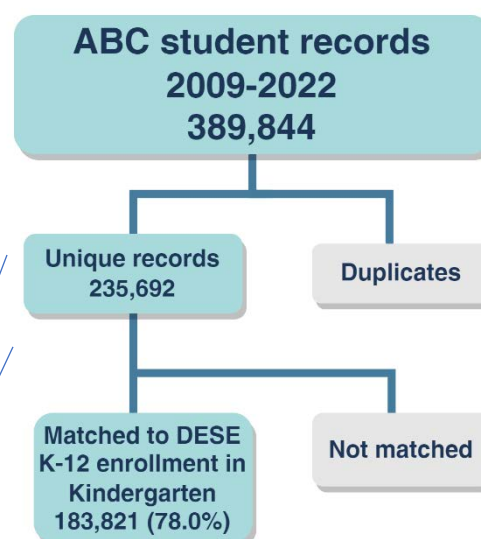
ABC DATA DESCRIPTION

Section Highlights

- ABC participants are highly likely to enroll in DESE kindergarten. 78% of ABC participants enrolled in DESE kindergarten in Arkansas.
- 38.4% of all DESE kindergarten students were ABC participants, steadily increasing from 33.5% in 2010 to 42.5% in 2017, and most recently 41.8% in 2021.
- 84.7% of ABC participants received full-time ABC services (7 hours or more per day)
- 33.5% of all DESE kindergarten student were full-time ABC participants (7 hours or more per day), steadily increasing from 29% in 2010 to 38% in 2017, and most recently 37% in 2021.

DESE provided 389,844 records of ABC students for academic years 2009 through 2022. The deduplication process for these 389,844 records resulted in 235,692 individual students noted as school age prior to August 1, 2021. ABC Pre-K Year 2022 were excluded because they would not be enrolled in DESE kindergarten during the 2021-2022 school year.

ABC Pre-K Year	Participants
2009	14,931
2010	19,238
2011	19,186
2012	19,227
2013	19,030
2014	19,207
2015	18,191
2016	18,384
2017	18,407
2018	18,140
2019	18,229
2020	17,989
2021	15,533
TOTAL	235,692

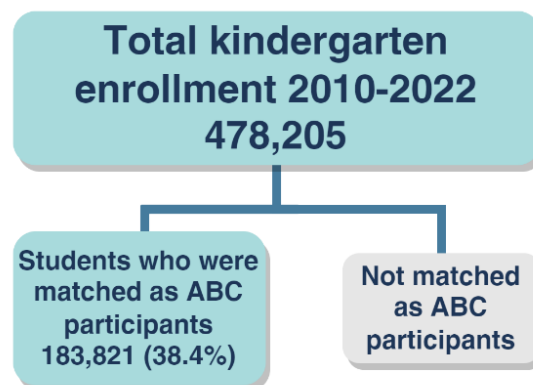


The student enrollment records for associated grades of K-12 for each of these ABC student years (2009-2021) were also provided by DESE with research IDs. 183,821 of the 235,692 eligible students were found enrolled in DESE K-12 schools in kindergarten during 2010-2022. 183,821 is 78.0% of the 235,692 eligible ABC students.

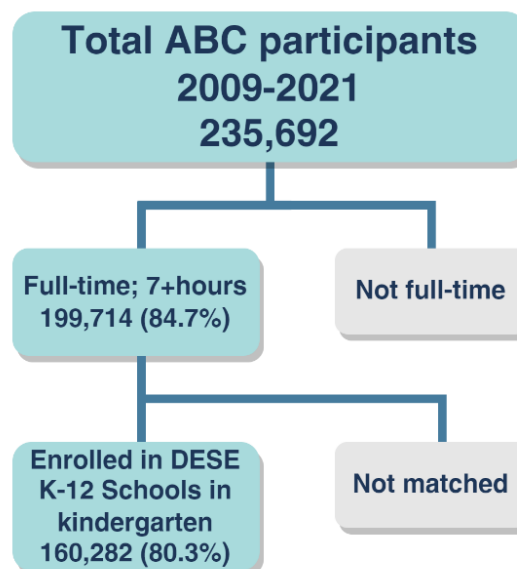
- 78.0% of ABC participants enrolled in DESE kindergarten in Arkansas

The total kindergarten enrollment for academic years 2010 through 2022 in the DESE data provided was 478,205. As previously stated, 183,821 ABC students were matched, representing 38.4% of the total DESE kindergarten enrollment for the thirteen academic years 2010 through 2022 as ABC participants.

- 38.4% of all DESE kindergarten students were ABC participants, steadily increasing from 33.5% in 2010 to 42.5% in 2017, and most recently 41.8% in 2021.

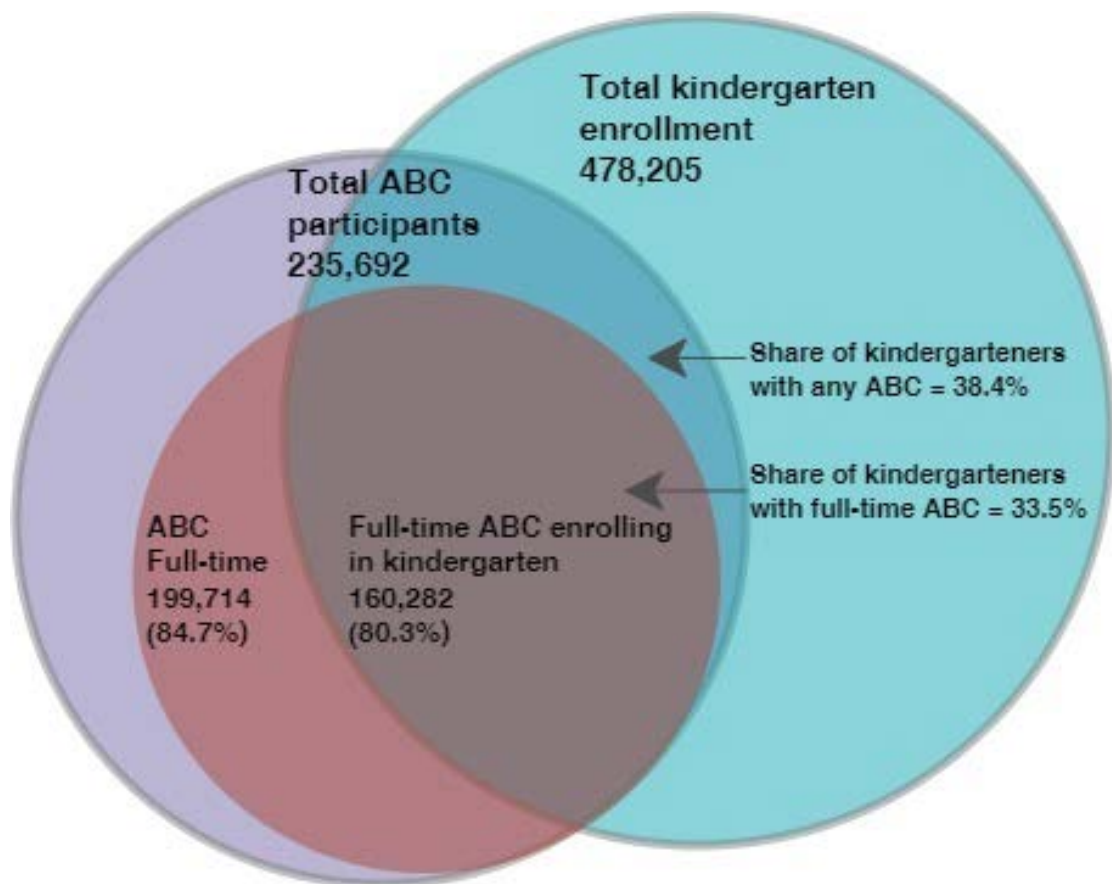


Participation in ABC includes children who receive part-time services (fewer than 7 hours per day, most often just 1 hour per day) and full-time services (7 hours or more per day). The number of ABC program full-time participants from 2009 to 2021 with 7 hours (or more) per day was 199,714. Because 235,692 ABC participants were previously identified as ABC participants, 199,714 as full-time (7 hours or more per day) ABC represents 84.7%. There were 160,282 of the 199,714 full-time participants from 2009 to 2021 matched to DESE kindergarten enrollment (80.3%). Compared to the full DESE enrollment for kindergarten, 34.4% were full-time ABC participants.



- 84.7% of ABC participants received full-time ABC services (7 hours or more per day)
- 80.3% of ABC full-time participants (7 hours or more per day) enrolled in DESE kindergarten in Arkansas

- 33.5% of all DESE kindergarten students were full-time ABC participants (7 hours or more per day), steadily increasing from 29% in 2010 to 38% in 2017, and most recently 37% in 2021.



REPORTING TERMS

ABC

Unless otherwise stated, references to Arkansas Better Chance (ABC) within this analysis specifically isolate full-time ABC participants (7 hours or more per day). While other children also received ABC services and are included in the ABC data sets provided, the evaluation of the ABC program focuses upon participants in the full-time ABC program.

FISCAL YEAR (FY)

Fiscal years referenced throughout this analysis are coded according to common naming standards. This analysis focuses on FY10 (2009-2010) through FY21 (2020-2021).

For quick reference, a lookup table has been provided.

Fiscal Year (FY)	Academic Year
10	2009-2010
11	2010-2011
12	2011-2012
13	2012-2013
14	2013-2014
15	2014-2015
16	2015-2016
17	2016-2017
18	2017-2018
19	2018-2019
20	2019-2020
21	2020-2021

CORE COMPARISON

In the core comparison, a phrase used throughout this analysis, the full-time participants in the ABC program who have the lowest socio-economic indicator (free meal status) are compared to student who received no known Pre-kindergarten services and are also in the lowest socio-economic indicator (free meal status). This comparison isolates the core difference in the two groups as the participation in ABC, while minimizing any difference which may be due to socio-economic factors. The evaluation of the ABC program is most valid when external factors are reduced in the calculations. ABC Gain is a calculation of a percentage associated with full-time ABC program participants with free meal status subtracting the percentage associated with no known Pre-kindergarten students with free meal status. A positive ABC Gain indicates a higher value for ABC. A negative ABC Gain indicates a lower value. ABC Gain is calculated for attendance days present, days absent, chronic absenteeism rates, assessment proficiency, and other measures in this analysis.

MEAL STATUS

Section Highlights

- The percent of all kindergarten students with direct certification and free lunch meal status has increased from 54% in FY10 to 60% in FY20, and 58% most recently in FY21.
- ABC kindergarten students have higher rates of direct certification and free lunch meal status than Non-ABC students for all years FY10-21.
- Direct Certification and free lunch meal status has increased from 65% in FY10 to 69% in FY21 for ABC kindergarten students.

Student enrollment meal status allows for a comparison of similar socioeconomic statuses for ABC participants and their non-ABC counterparts in the DESE kindergarten records. Meal status shifted from three values (Free, Reduced, Full Price) until Fiscal Year (FY) 14, corresponding to academic year 2013-2014, to four values (Direct Certification, Free, Reduced, Full Price) beginning in FY15, academic year 2014-2015. Direct Certification is also a free meal status; however, the identification of qualifying students is performed at the state level by identifying the student's household as participating in the Supplemental Nutrition Assistance Program (SNAP).

Free meals for students not identified through Direct Certification at the state level are possible through a free meal application process at the school level, completed by the parent or guardian. Both SNAP and free meal applications require household income to be below 130% of the national poverty level. Those students with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals. Incomes above 185 percent of the poverty level are classified as Full Price Paid meals. ABC household incomes shall not exceed 200 percent of the poverty level, allowing the lowest Full Price Paid households to qualify for ABC.

- Direct Certification meal status indicates SNAP participants in households with incomes below 130% of the poverty level
- Free meal status indicates households with incomes below 130% of the poverty level
- Reduced meal status indicates households with incomes from 130% to 185% of the poverty level
- Full Price Paid meal status indicates households with incomes above 185% of the poverty level
- ABC participants include households up to 200% of the poverty level

In order to provide a clearer view of free meal status across the transition years for DESE meal status from three values to four values, a combined value for all free meals (Direct Certification + Free) is calculated in the resulting tables as "DC+Free".

Percent of national poverty level	Below 130%	130% to 185%	Above 185% to 200%	over 200%
Meal Status	Direct Certification or Free Meal	Reduced	Full-price	
ABC participation	Eligible			Not Eligible

MEAL STATUS – ALL KINDERGARTEN STUDENTS

Kindergarten meal status totals for all students by fiscal year:

Fiscal Year	K Students	Direct Cert	Free	DC+Free	Reduced	Full Price Paid
10	38,155		54%	54%	10%	36%
11	34,360		54%	54%	9%	37%
12	35,151		55%	55%	9%	36%
13	38,547		55%	55%	9%	36%
14	37,611		54%	54%	9%	37%
15	36,302	34%	23%	57%	9%	35%
16	35,435	36%	22%	59%	7%	34%
17	35,173	33%	25%	58%	8%	34%
18	35,292	32%	26%	57%	8%	34%
19	34,861	30%	27%	57%	8%	35%
20	35,301	33%	27%	60%	8%	33%
21	33,767	28%	30%	58%	8%	34%

MEAL STATUS – ABC KINDERGARTEN STUDENTS

Full-time ABC participants' meal status percentages

Fiscal Year	K Students	Direct Cert	Free	DC+Free	Reduced	Full Price Paid
10	10,967		65%	65%	13%	22%
11	11,386		65%	65%	13%	23%
12	10,647		66%	66%	13%	22%
13	12,548		64%	64%	13%	23%
14	12,666		62%	62%	12%	25%
15	12,574	39%	26%	65%	12%	23%
16	12,970	43%	25%	68%	10%	22%
17	13,447	40%	28%	68%	10%	22%
18	13,075	37%	29%	66%	11%	23%
19	12,820	35%	31%	66%	10%	23%
20	12,951	39%	30%	69%	10%	21%
21	12,543	34%	35%	69%	10%	21%

MEAL STATUS – NON-ABC KINDERGARTEN STUDENTS

All other kindergarten Non-ABC students (not full-time ABC participants) meal status

Fiscal Year	K Students	Direct Cert	Free	DC+Free	Reduced	Full Price Paid
10	27,188		50%	50%	8%	42%
11	22,974		49%	49%	8%	43%
12	24,504		50%	50%	8%	42%
13	25,999		50%	50%	8%	42%
14	24,945		49%	49%	8%	43%

15	23,728	31%	21%	52%	7%	41%
16	22,465	33%	20%	53%	6%	41%
17	21,726	29%	22%	52%	7%	42%
18	22,217	29%	24%	52%	7%	41%
19	22,041	27%	24%	52%	7%	41%
20	22,350	29%	25%	54%	6%	39%
21	21,224	25%	27%	52%	6%	42%

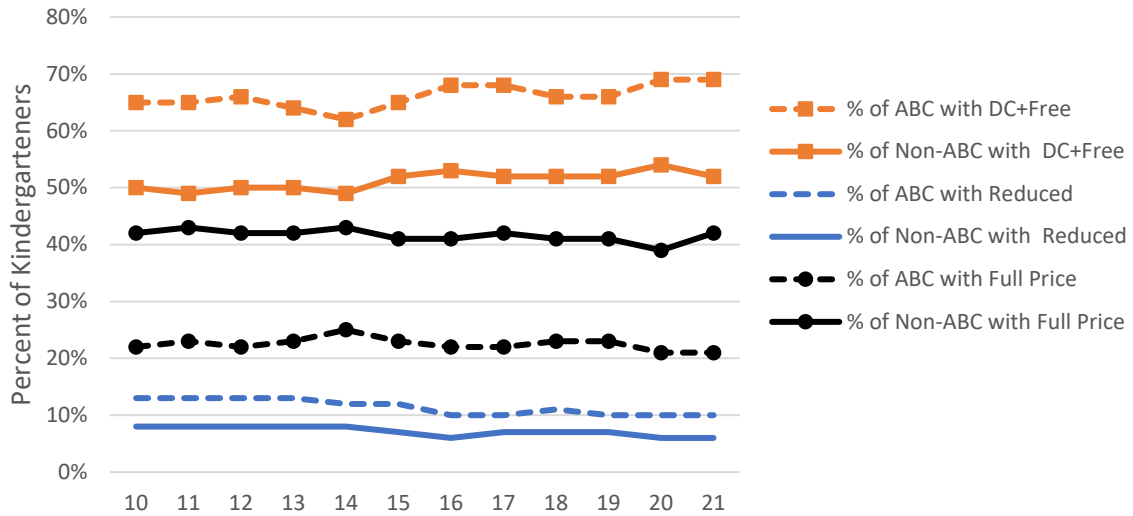
References to ABC participants and data identified as “ABC” throughout the remainder of this report are specifically ABC full-time participants receiving services 7 or more hours per day. Non-ABC is a descriptor for all other students in the DESE data.

Side-by-side comparison of meal status percentages for ABC and Non-ABC

Fiscal Year	ABC DC+Free	Non-ABC DC+Free	ABC Reduced	Non-ABC Reduced	ABC Full Price	Non-ABC Full Price
10	65%	50%	13%	8%	22%	42%
11	65%	49%	13%	8%	23%	43%
12	66%	50%	13%	8%	22%	42%
13	64%	50%	13%	8%	23%	42%
14	62%	49%	12%	8%	25%	43%
15	65%	52%	12%	7%	23%	41%
16	68%	53%	10%	6%	22%	41%
17	68%	52%	10%	7%	22%	42%
18	66%	52%	11%	7%	23%	41%
19	66%	52%	10%	7%	23%	41%
20	69%	54%	10%	6%	21%	39%
21	69%	52%	10%	6%	21%	42%

Because ABC participation includes households with up to 200% of the poverty level, the majority of ABC participants receive free meals (Direct Cert + Free), most recently, 69% in academic year 2020-2021. All other students also received free meals more often than reduced or full price, but at the lower rate of 52%.

Percent of ABC and non-ABC Kindergarteners
with each meal status type
FY10-21



PRIMARY ANALYSIS – 2021 ACT ASPIRE LITERACY OUTCOMES

CORE COMPARISON

Full-time participants in the ABC program who have the lowest socio-economic indicator (free meal and direct certification status) are compared to students who received no known Pre-kindergarten services and are also in the lowest socio-economic indicator (free meal and direct certification status). This comparison isolates the core difference in the two groups as the participation in ABC, while minimizing any difference which may be due to socio-economic factors.

CORE COMPARISON COUNTS

Fiscal Year	K Students	ABC	No Known
2010	38,155	7,102	6,555
2011	34,360	7,393	5,316
2012	35,151	6,980	6,049
2013	38,560	8,032	6,912
2014	37,611	7,876	6,853
2015	36,302	8,175	6,984
2016	35,435	8,804	7,031
2017	35,173	9,131	6,654
2018	35,292	8,632	7,137
2019	34,861	8,487	7,109
2020	35,301	8,954	7,632
2021	33,767	8,645	6,381
2022	35,001	5,314	8,906

CORE COMPARISON COUNTS WITH FREE MEAL DETAIL

Fiscal Year	K Meal Status	ABC	NK
10	Free	7,102	6,555
11	Free	7,393	5,316
12	Free	6,980	6,049
13	Free	8,031	6,912
14	Free	7,876	6,853
15	Direct Cert.	4,921	4,069
15	Free	3,254	2,915
16	Direct Cert.	5,527	4,203
16	Free	3,277	2,828
17	Direct Cert.	5,342	3,612
17	Free	3,789	3,042
18	Direct Cert.	4,875	3,806
18	Free	3,757	3,331
19	Direct Cert.	4,540	3,744

19	Free	3,947	3,365
20	Direct Cert.	5,085	4,069
20	Free	3,869	3,563
21	Direct Cert.	4,311	3,079
21	Free	4,334	3,302
22	Direct Cert.	2,707	4,477
22	Free	2,607	4,429

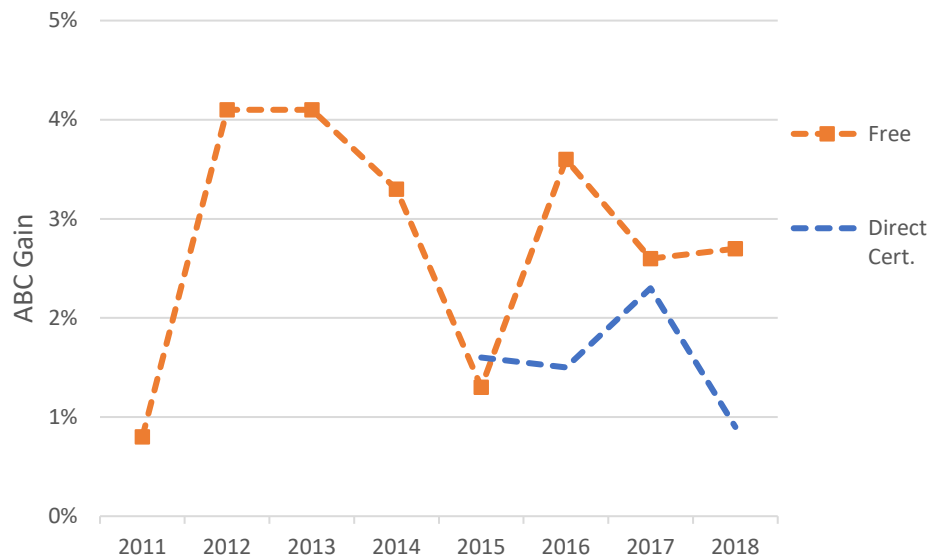
2021 ACT Aspire – Number of Students Tested

Kindergarten FY	K Meal Status	2021 ABC Tested	2021 No Known Tested
2011	Free	5,838	3,568
2012	Free	5,843	4,271
2013	Free	6,838	5,145
2014	Free	6,698	5,198
2015	Direct Cert.	4,184	3,123
2015	Free	2,827	2,245
2016	Direct Cert.	4,888	3,411
2016	Free	2,887	2,213
2017	Direct Cert.	4,739	2,918
2017	Free	3,376	2,380
2018	Direct Cert.	3,935	2,750
2018	Free	3,110	2,375

2021 ACT Aspire ELA Proficiency

Kindergarten FY	K Meal Status	2021 ABC	2021 No Known	2021 ABC Gain
2011	Free	25.7%	24.9%	0.8%
2012	Free	30.4%	26.3%	4.1%
2013	Free	32.9%	28.8%	4.1%
2014	Free	29.8%	26.5%	3.3%
2015	Direct Cert.	25.8%	24.2%	1.6%
2015	Free	30.0%	28.6%	1.3%
2016	Direct Cert.	22.2%	20.7%	1.5%
2016	Free	29.6%	26.0%	3.6%
2017	Direct Cert.	23.9%	21.7%	2.3%
2017	Free	29.1%	26.6%	2.6%
2018	Direct Cert.	19.7%	18.8%	0.9%
2018	Free	26.8%	24.0%	2.7%

ABC Gain, ASPIRE ELA Proficiency

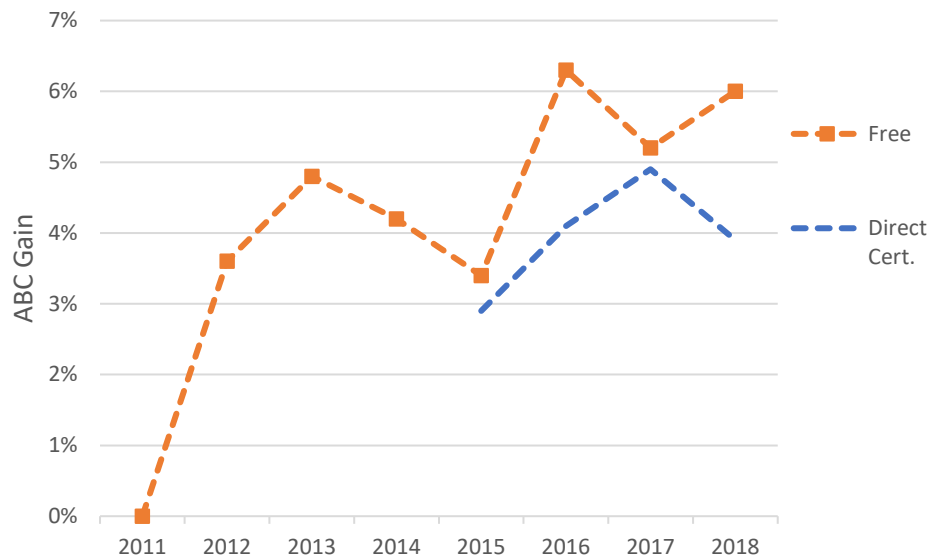


The two subcategories of English and Reading for ACT Aspire ELA were included in the 2022 ABC evaluation data.

2021 ACT Aspire ELA – English Subcategory Proficiency

Kindergarten FY	K Meal Status	2021 ABC	2021 No Known	2021 ABC Gain
2011	Free	45.0%	43.7%	1.4%
2012	Free	50.1%	46.5%	3.6%
2013	Free	65.8%	61.0%	4.8%
2014	Free	70.3%	66.1%	4.2%
2015	Direct Cert.	59.6%	56.8%	2.9%
2015	Free	64.9%	61.6%	3.4%
2016	Direct Cert.	60.6%	56.5%	4.1%
2016	Free	68.1%	61.8%	6.3%
2017	Direct Cert.	53.0%	48.2%	4.9%
2017	Free	58.7%	53.4%	5.2%
2018	Direct Cert.	52.8%	48.9%	3.9%
2018	Free	61.9%	55.9%	6.0%

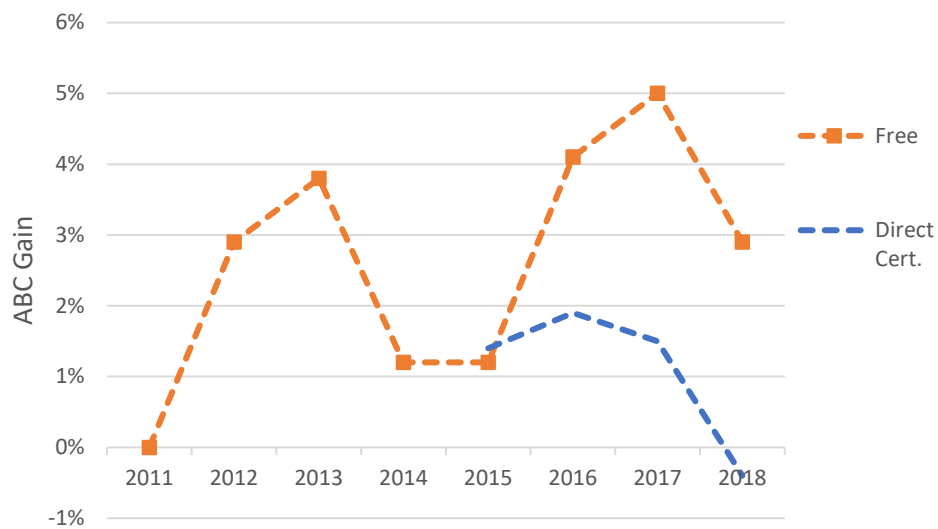
ABC Gain, ASPIRE English Proficiency



2021 ACT Aspire ELA – Reading Subcategory Proficiency

Kindergarten FY	K Meal Status	2021 ABC	2021 No Known	2021 ABC Gain
2011	Free	21.4%	20.7%	0.7%
2012	Free	28.1%	25.2%	2.9%
2013	Free	38.8%	34.9%	3.8%
2014	Free	24.9%	23.6%	1.2%
2015	Direct Cert.	25.8%	24.4%	1.4%
2015	Free	29.1%	27.9%	1.2%
2016	Direct Cert.	23.8%	21.9%	1.9%
2016	Free	30.3%	26.2%	4.1%
2017	Direct Cert.	28.0%	26.4%	1.5%
2017	Free	34.4%	29.3%	5.0%
2018	Direct Cert.	19.7%	20.1%	-0.4%
2018	Free	27.3%	24.5%	2.9%

ABC Gain, ASPIRE Reading Proficiency

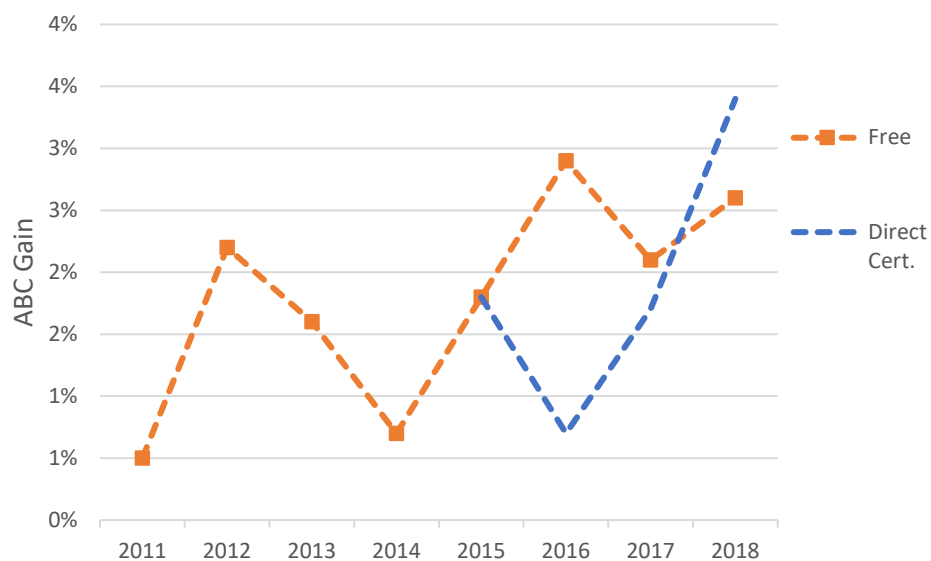


2021 ACT ASPIRE MATH AND SCIENCE OUTCOMES

2021 ACT Aspire Math Proficiency

Kindergarten FY	K Meal Status	2021 ABC	2021 No Known	2021 ABC Gain
2011	Free	11.9%	11.4%	0.5%
2012	Free	17.7%	15.5%	2.2%
2013	Free	25.1%	23.5%	1.6%
2014	Free	26.9%	26.3%	0.7%
2015	Direct Cert.	29.6%	27.9%	1.8%
2015	Free	33.6%	31.8%	1.8%
2016	Direct Cert.	22.9%	22.2%	0.7%
2016	Free	30.2%	27.3%	2.9%
2017	Direct Cert.	29.9%	28.3%	1.7%
2017	Free	37.2%	35.1%	2.1%
2018	Direct Cert.	37.1%	33.7%	3.4%
2018	Free	46.8%	44.1%	2.6%

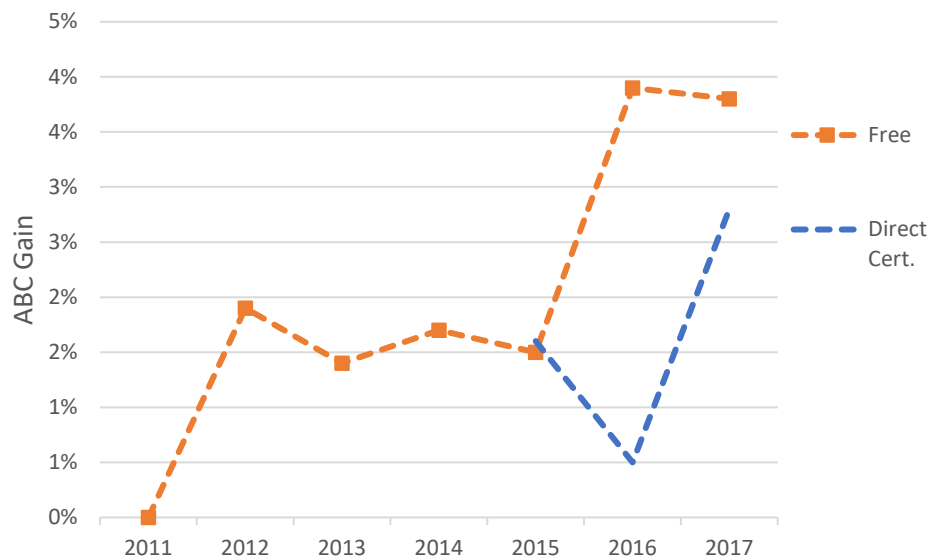
ABC Gain, ASPIRE Math



2021 ACT Aspire Science Proficiency

Kindergarten FY	K Meal Status	2021 ABC	2021 No Known	2021 ABC Gain
2011	Free	18.4%	17.3%	1.1%
2012	Free	21.9%	19.9%	1.9%
2013	Free	25.8%	24.5%	1.4%
2014	Free	27.8%	26.1%	1.7%
2015	Direct Cert.	26.9%	25.3%	1.6%
2015	Free	30.3%	28.9%	1.5%
2016	Direct Cert.	19.6%	19.1%	0.5%
2016	Free	28.6%	24.7%	3.9%
2017	Direct Cert.	24.2%	21.5%	2.8%
2017	Free	30.5%	26.8%	3.8%
2018	Direct Cert.	20.7%	20.5%	0.2%
2018	Free	28.9%	25.3%	3.6%

ABC Gain, ASPIRE Science



KINDERGARTEN ATTENDANCE

DESE data provided two data fields related to total day of attendance in an academic year. “Total Days Present” and “Total Days Absent” are reported for each DESE student. The academic year is a total of 178 days in Arkansas. Students attending two or more schools in an academic year have had their “Total Days Present” and “Total Days Absent” records at each school summed to represent their academic year in a single attendance record.

Section Highlights

- ABC participants were counted present for 4.3 additional days compared to Non-ABC participants in FY21. On average, ABC participants had more days present in kindergarten than Non-ABC participants for all years in FY10-21.
- Based on the relatively high number of days present for ABC participants, ABC students should have similarly fewer days reported absent. However, there was no significant difference in the Total Days Absent in kindergarten for ABC vs. Non-ABC students. This discrepancy is partially explained by missing or “unreported” records.
- An average of three days are unreported from the records for each ABC student, and an average of six days are unreported from the records of each Non-ABC student. It is unclear why Non-ABC students would have more unreported days than ABC students.

FY	Kindergarten Enrolled	Attendance Recorded	% with Attendance	Average Total Days Present	Average Total Days Absent
10	38,155	37,987	99.6%	163.5	10.7
11	34,360	34,127	99.3%	164.3	10.1
12	35,151	34,899	99.3%	164.4	9.1
13	38,560	38,411	99.6%	164.5	10.1
14	37,611	37,567	99.9%	163.4	9.7
15	36,302	36,186	99.7%	163.9	10.1
16	35,435	35,382	99.9%	165.0	9.9
17	35,173	35,095	99.8%	164.5	10.1
18	35,292	35,185	99.7%	163.7	11.0
19	34,861	34,776	99.8%	164.0	10.8
20	35,301	35,232	99.8%	166.4	8.5
21	33,767	33,637	99.6%	164.5	9.4

CORE COMPARISON - DAYS PRESENT

Calculations for Total Days Present and Total Days Absent for attendance can be isolated for the Core Comparison of this analysis. The “ABC Gain” will be a positive or negative number representing the difference between full-time ABC participation and No Known Pre-K (NK), in terms of days. A positive ABC Gain indicates that ABC participants attended more days.

Kindergarten Average Total Days Present

FY	ABC	NK	ABC Gain
10	163.7	158.1	5.6
11	164.5	158.5	6.0
12	165.1	159.1	6.0
13	165.2	159.5	5.7
14	164.1	158.0	6.1
15	164.8	158.3	6.5
16	165.4	160.2	5.2
17	165.0	159.2	5.7
18	163.8	158.7	5.1
19	164.2	159.4	4.8
20	167.0	162.2	4.8
21	163.4	159.1	4.3

There is a significant difference in average Total Days Present in kindergarten between ABC and NK. On average, ABC kindergarten students attend five additional days of school instruction as compared to Non-ABC students, most recently 4.3 additional days in FY21.

CORE COMPARISON - DAYS ABSENT

Kindergarten Average Total Days Absent

FY	ABC	NK	ABC Gain
10	11.2	13.2	-1.9
11	10.8	12.3	-1.5
12	9.6	11.2	-1.6
13	10.5	12.2	-1.7
14	10.3	11.9	-1.6
15	10.6	12.2	-1.7
16	10.4	11.9	-1.5
17	10.6	12.2	-1.6
18	11.5	13.1	-1.6
19	11.5	13.1	-1.6
20	8.8	10.3	-1.5
21	11.1	12.0	-0.9

ABC kindergarten students have one to two fewer days of absences than No Known Pre-K, most recently 0.9 absent days fewer in FY21. There is an inconsistency in the reporting of days present and days absent, since an ABC average of five more days present should reflect five fewer days absent. The inconsistency can be measured as “days unreported”, calculated from the 178 days of school in Arkansas.

CORE COMPARISON - DAYS UNREPORTED

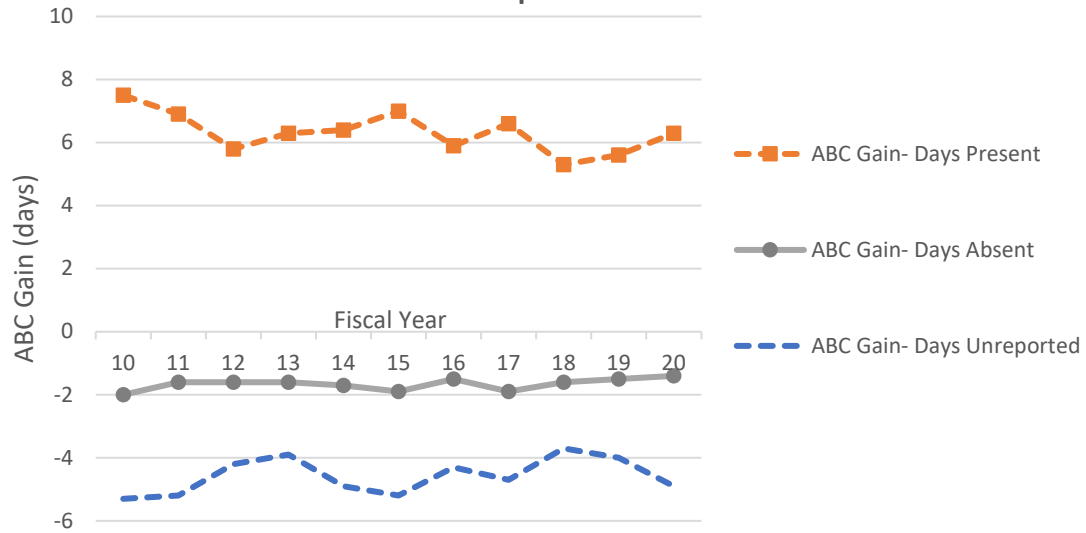
The total number of school days per year is 178 as mandated in Arkansas. The Total Days Absent plus Totals Days Present for each student often results in fewer than 178 days, therefore, a value for Total Days Unreported has been calculated. Total Days Unreported is an additional research variable, not included in the DESE research data, representing the difference between the mandated 178 school days and the number of days reported in Total Days Present and Total Days Absent.

Kindergarten Average Total Days Unreported

FY	ABC	NK	ABC Gain
10	3.1	6.8	-3.7
11	2.6	7.2	-4.6
12	3.3	7.7	-4.4
13	2.3	6.3	-4.0
14	3.6	8.0	-4.4
15	2.6	7.5	-4.9
16	2.3	5.9	-3.6
17	2.4	6.6	-4.1
18	2.7	6.2	-3.5
19	2.2	5.5	-3.3
20	2.2	5.6	-3.3
21	3.5	6.9	-3.4

These Total Days Unreported averages reflect the apparent missing days in the 178 day school year. The larger positive ABC Gain in average Total Days Present for ABC has been countered by the negative ABC Gain for average Total Days Absent combined with Total Days Unreported. Based upon the 178 day school year, a negative ABC Gain for Total Days Unreported indicates fewer ABC unreported days.

Kindergarten Average Attendance for ABC vs. No Known Pre-K with Direct Certification plus Free Meals



ELEMENTARY AND SECONDARY ATTENDANCE

The continued enrollment of kindergarten students in DESE allows for a count of students in each subsequent year. Students who did not attend kindergarten in DESE schools have been excluded from subsequent year counts. This analysis represents a longitudinal view of kindergarten students, rather than including students who transferred into DESE schools in later grade levels after attending kindergarten elsewhere.

CORE COMPARISON – DAYS PRESENT – ALL ACADEMIC YEARS

The core comparison of ABC vs. No Known Pre-K for free meal status (Direct Certification + Free) can be extended to all available academic years of data.

ABC - Yearly Average Total Days Present for Direct Certification plus Free Meals

(Rows: Kindergarten year; Columns: subsequent years)

FY	10 ABC	11 ABC	12 ABC	13 ABC	14 ABC	15 ABC	16 ABC	17 ABC	18 ABC	19 ABC	20 ABC	21 ABC
10	163.7	165.0	164.8	165.4	164.6	165.2	165.9	165.5	163.4	162.6	163.6	157.6
11		164.5	164.8	164.5	164.2	165.2	165.8	165.4	164.5	164.1	165.1	159.6
12			165.1	165.5	164.2	165.8	166.4	166.2	165.3	165.1	166.6	161.1
13				165.2	164.0	165.2	166.7	166.1	165.4	165.6	167.6	163.1
14					164.1	164.3	165.4	165.7	165.3	165.8	167.9	163.4
15						164.8	165.1	165.7	164.9	165.2	167.8	163.7
16							165.4	165.4	164.9	165.5	167.9	163.9
17								165.0	164.1	164.7	167.7	163.8
18									163.8	164.1	167.6	163.7
19										164.2	167.2	163.4
20											167.0	163.1
21												163.4

No Known Pre-K (NK) - Yearly Average Total Days Present for Direct Certification plus Free Meals

(Rows: Kindergarten year; Columns: subsequent years)

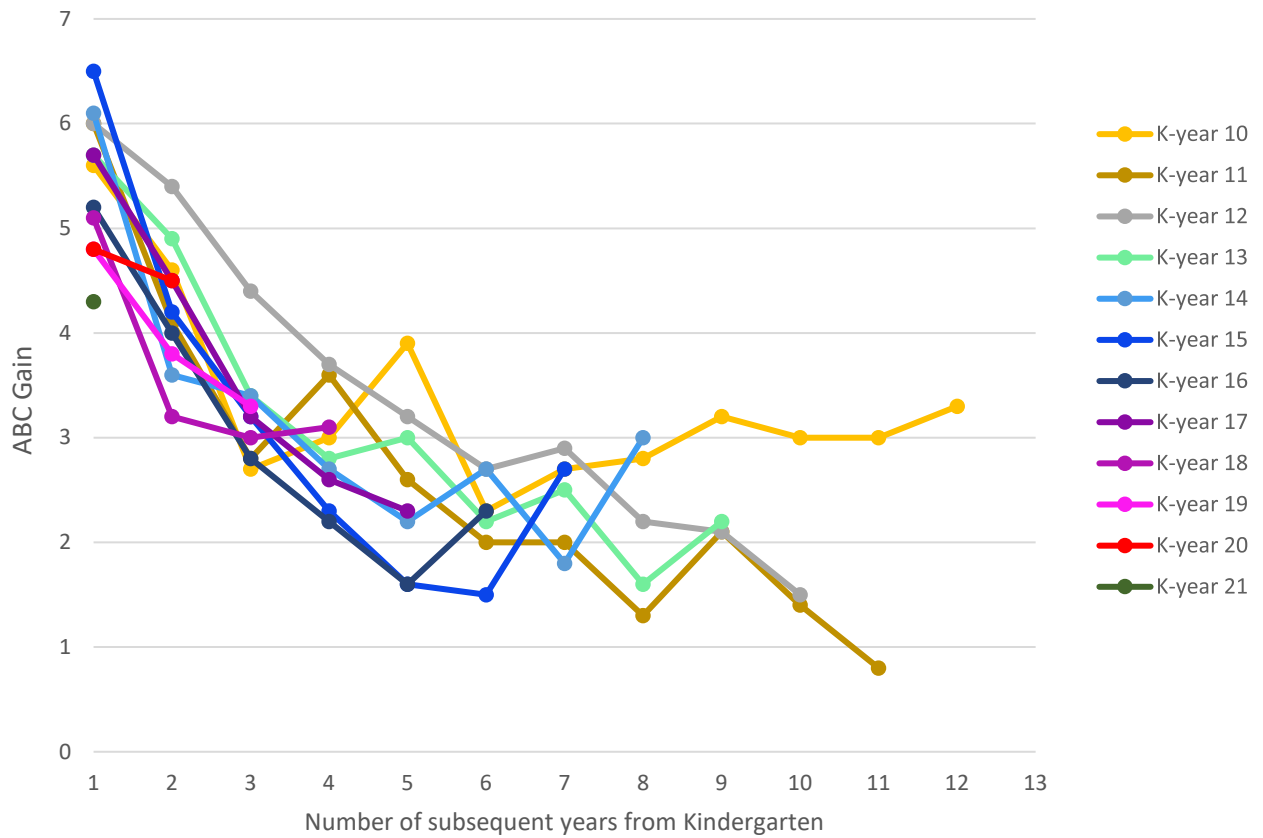
FY	10 NK	11 NK	12 NK	13 NK	14 NK	15 NK	16 NK	17 NK	18 NK	19 NK	20 NK	21 NK
10	158.1	160.4	162.1	162.4	160.7	162.8	163.2	162.8	160.1	159.6	160.6	154.3
11		158.5	160.8	161.7	160.6	162.6	163.8	163.4	163.2	161.9	163.8	158.7
12			159.1	160.1	159.8	162.1	163.2	163.6	162.4	162.9	164.6	159.6
13				159.5	159.1	161.8	163.9	163.1	163.1	163.1	166.0	160.9
14					158.0	160.7	162.0	163.0	163.1	163.1	166.1	160.4
15						158.3	160.8	162.5	162.6	163.6	166.3	161.0
16							160.2	161.4	162.1	163.3	166.4	161.6
17								159.2	159.7	161.5	165.1	161.5
18									158.7	160.9	164.6	160.6
19										159.4	163.4	160.0
20											162.2	158.7
21												159.1

ABC Gain - Yearly Average Net Days Present for Direct Certification plus Free Meals vs. No Known Pre-K
(Rows: Kindergarten year; Columns: subsequent years)

FY	10	11	12	13	14	15	16	17	18	19	20	21
10	5.6	4.6	2.7	3.0	3.9	2.3	2.7	2.8	3.2	3.0	3.0	3.3
11		6.0	4.1	2.8	3.6	2.6	2.0	2.0	1.3	2.1	1.4	0.8
12			6.0	5.4	4.4	3.7	3.2	2.7	2.9	2.2	2.1	1.5
13				5.7	4.9	3.4	2.8	3.0	2.2	2.5	1.6	2.2
14					6.1	3.6	3.4	2.7	2.2	2.7	1.8	3.0
15						6.5	4.2	3.2	2.3	1.6	1.5	2.7
16							5.2	4.0	2.8	2.2	1.6	2.3
17								5.7	4.5	3.2	2.6	2.3
18									5.1	3.2	3.0	3.1
19										4.8	3.8	3.3
20											4.8	4.5
21												4.3

The core comparison groups reflect ABC Gain of 0.8 to 6.5 additional average total days present for ABC compared to No Known Pre-K. The ABC Gain is highest in the kindergarten year and generally decreases in subsequent years. All 78 combinations of kindergarten and subsequent year show a positive ABC Gain for additional days present for ABC when compared to No Known Pre-K (NK).

ABC Gain for Elementary and Secondary Attendance
(Direct Certification plus Free Meals vs. No Known Pre-K)



PRE-KINDERGARTEN

Section Highlights

- Parent and guardian reports indicate that between 41% and 54% of kindergarten students have no known Pre-K participation, although participation in ABC is under-reported by parent/guardian for this data element.

PARTICIPATION

The identification of students receiving no Pre-kindergarten (No Pre-K) services utilizes the DESE Pre-School (Kindergarten) indicator (ST0105) provided for each student, as reported by the parent/guardian.

DESE Pre-School indicator (ST0105)

Pre-School (Kindergarten) Indicator for All Kindergarten Students

FY	A	C	E	EC	H	NA	O	P	PS
10	24%	0%	0%	1%	9%	41%	5%	13%	6%
11	23%	1%	0%	2%	9%	41%	5%	14%	7%
12	23%	0%	0%	2%	8%	45%	4%	12%	5%
13	23%	1%	0%	2%	8%	46%	4%	11%	6%
14	23%	0%	0%	2%	7%	45%	4%	12%	7%
15	22%	1%	0%	2%	6%	48%	4%	10%	7%
16	22%	0%	0%	2%	6%	50%	4%	9%	7%
17	23%	0%	0%	2%	5%	49%	4%	9%	7%
18	22%	0%	0%	2%	5%	52%	3%	10%	6%
19	26%	0%	0%	2%	4%	51%	3%	9%	6%
20	24%	0%	0%	2%	4%	54%	3%	8%	5%
21	24%	0%	0%	1%	4%	49%	4%	10%	7%
22	21%	0%	0%	2%	4%	51%	5%	10%	7%

A = ABC

C = 21st Century Community Learning Center

E = Even start

EC= Early Childhood Special Ed

H = Head Start

NA = Not Applicable

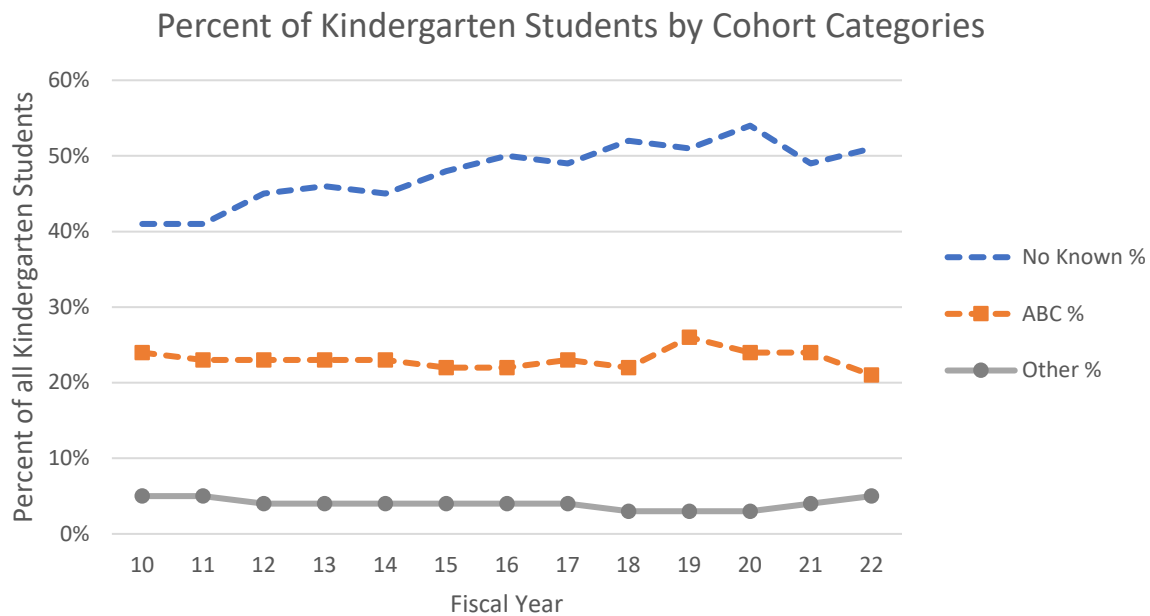
O = Other

P = Private Preschool

PS = Public School Pre School

Participation in ABC is under-reported by parent/guardian for this data element. Known participation in ABC full-time (at least 7 hours per day) has been identified from the ABC historical records. Despite the

inconsistency in the identification of ABC participants by parent/guardian, the best available information to identify students who did not receive Pre-kindergarten services is the “Not Applicable” value of the DESE Pre-School (Kindergarten) indicator (ST0105). Between 41% and 54% of kindergarten students have been noted as “NA” or Not Applicable for Pre-school and may be relabeled as “No Known Pre-K”.



CHRONIC ABSENTEEISM

Section Highlights

- The core comparison groups reflect ABC Gains in the form of lower chronic absenteeism for all three absenteeism calculations for ABC vs. No Known Pre-K.
- Among kindergarteners with direct certification or free meal status;
 - There is an ABC Gain of 3.2 to 7.2 percent lower chronic absenteeism for ABC vs. No Known Pre-K for code CA10 (18 days or more absent).
 - There is an ABC Gain of 4.2 to 8.0 percent lower chronic absenteeism for ABC vs. No Known Pre-K for code CA15 (15 days or more absent).
 - There is an ABC Gain of 7.8 to 12.4 percent lower chronic absenteeism for ABC vs. No Known Pre-K for code CA160 (160 days or fewer present).

Defined by the U.S. Department of Education's Ed Facts Division, chronic absenteeism is a student with 15 or more absent days in an academic year. Another measure of chronic absenteeism comes from the Office of Civil Rights, where chronic absenteeism is defined as ten percent or more of school days absent. A number of sources report that each state may have varying definitions of chronic absenteeism.

CHRONIC ABSENTEEISM - RESEARCH DATA CODES

To establish a broad view of chronic absenteeism in this analysis for Arkansas, three observations for chronic absenteeism (CA) will be calculated and coded as CA10, CA15, and CA160.

CA10 = Ten percent or more absent, that is, 18 days or more absent (Arkansas 178 day school year)

CA15 = 15 days or more absent

CA160 = 160 or fewer days present

The definitions for CA10 and CA15 are provided in national research, while the definition for CA160 is specific to Arkansas and the identification of the difference between the mandated 178 school days and the number of days reported in Total Days Present and Total Days Absent. Theoretically, 18 days absent in Arkansas would automatically mean 160 days present, however, only 84.4% of reported Total Days Present plus Total Days Absent equal 178 days. As a result, an additional 15.6% of records have a potential difference between the identification of 18 days absent or 160 days present.

CORE COMPARISON - CHRONIC ABSENTEEISM - KINDERGARTEN

ABC – Chronic Absenteeism Percentage

FY	Students	CA10	CA15	CA160
10	7,089	18.8%	26.9%	23.4%
11	7,368	17.1%	25.3%	21.0%
12	6,936	12.8%	20.0%	17.5%
13	8,020	15.5%	23.6%	18.6%
14	7,875	15.2%	22.6%	23.5%
15	8,162	15.6%	23.4%	20.7%
16	8,793	15.0%	22.6%	18.5%

17	9,119	15.5%	23.6%	19.3%
18	8,614	18.9%	27.5%	22.5%
19	8,472	17.7%	26.4%	21.4%
20	8,948	9.6%	15.7%	13.0%
21	8,619	18.8%	25.3%	23.6%

No Known Pre-K – Chronic Absenteeism Percentage

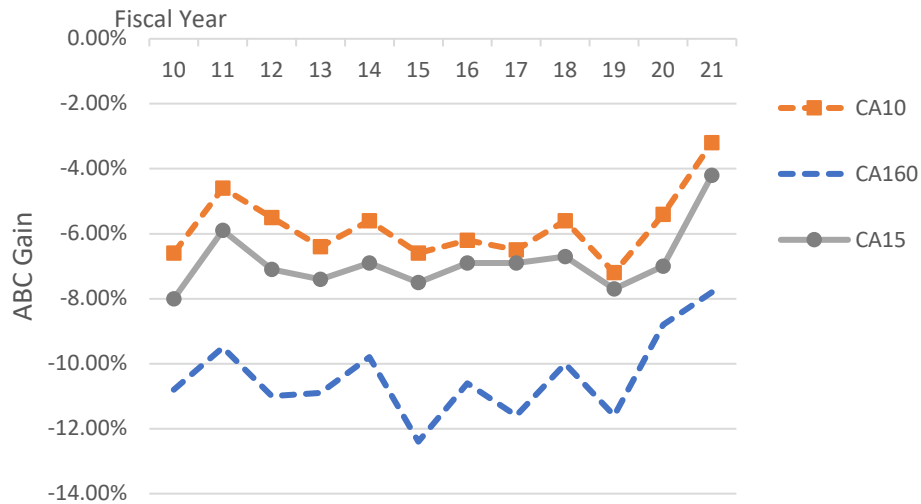
FY	Students	CA10	CA15	CA160
10	6,532	25.4%	34.9%	34.2%
11	5,280	21.7%	31.1%	30.5%
12	5,989	18.2%	27.1%	28.5%
13	6,887	22.0%	31.0%	29.5%
14	6,844	20.8%	29.5%	33.3%
15	6,962	22.2%	30.9%	33.1%
16	7,022	21.2%	29.5%	29.1%
17	6,643	22.0%	30.5%	30.9%
18	7,112	24.5%	34.3%	32.5%
19	7,096	24.9%	34.0%	33.0%
20	7,625	15.0%	22.7%	21.8%
21	6,361	22.1%	29.5%	31.4%

ABC Gain – Chronic Absenteeism

FY	CA10	CA15	CA160
10	-6.6%	-8.0%	-10.8%
11	-4.6%	-5.9%	-9.5%
12	-5.5%	-7.1%	-11.0%
13	-6.4%	-7.4%	-10.9%
14	-5.6%	-6.9%	-9.8%
15	-6.6%	-7.5%	-12.4%
16	-6.2%	-6.9%	-10.6%
17	-6.5%	-6.9%	-11.6%
18	-5.6%	-6.7%	-10.0%
19	-7.2%	-7.7%	-11.6%
20	-5.4%	-7.0%	-8.8%
21	-3.2%	-4.2%	-7.8%

The core comparison groups reflect ABC Gain values of 3.2 to 7.2 percent lower chronic absenteeism code CA10 for ABC vs. No Known Pre-K for Direct Certification and Free Meals in kindergarten. The core comparison groups reflect ABC Gain values of 4.2 to 8.0 percent lower chronic absenteeism code CA15 for ABC vs. No Known Pre-K for Direct Certification and Free Meals in kindergarten. The core comparison groups reflect ABC Gain values of 7.8 to 12.4 percent lower chronic absenteeism code CA160 for ABC vs. No Known Pre-K for Direct Certification and Free Meals in kindergarten.

ABC Percentage Gain in Chronic Absenteeism vs. No Known Pre-K (Among Direct Certification plus Free Meals)



RETENTION

Section Highlights

- Lower rates of retention are observed for ABC for Direct Certification and Free meal status in all years after the first year of kindergarten when compared to No Known Pre-K for Direct Certification and Free meal students.

Retention impacts measurements for attendance and special education indicators identified in assessment data sets. Students who are not promoted from one grade level to the next according to standard annual progress are retained or “held back” to repeat a grade level. This repetition of a grade level removes the student from the majority of his/her classmates, particularly in the data sets of longitudinal research.

CORE COMPARISON – RETENTION

ABC – Direct Certification plus Free Meals – Retention Percentage

(Rows: Kindergarten year; Columns: subsequent years)

FY	11	12	13	14	15	16	17	18	19	20	21
10	7.5%	13.1%	15.3%	16.1%	16.3%	16.5%	16.8%	17.3%	18.0%	20.5%	21.5%
11		6.5%	11.6%	14.0%	14.8%	15.1%	15.6%	16.0%	16.4%	16.6%	18.6%
12			5.3%	9.8%	11.8%	12.4%	12.8%	13.0%	13.7%	14.1%	14.1%
13				5.4%	9.4%	10.9%	11.5%	11.6%	11.8%	12.1%	12.3%
14					5.4%	9.0%	10.6%	11.1%	11.5%	11.7%	11.8%
15						5.1%	8.7%	10.3%	10.8%	10.9%	10.9%
16							5.3%	8.8%	9.8%	10.3%	10.3%
17								4.3%	7.9%	9.1%	9.4%
18									5.1%	8.4%	9.3%
19										4.4%	6.0%
20											2.9%

Students are not retained during their initial kindergarten year, but may be retained in the years that follow, FY11, FY12, etc.

No Known Pre-K – Direct Certification plus Free Meals – Retention Percentage

(Rows: Kindergarten year; Columns: subsequent years)

FY	11	12	13	14	15	16	17	18	19	20	21
10	10.2%	15.6%	17.5%	18.6%	18.9%	19.5%	19.9%	20.7%	21.5%	24.6%	24.5%
11		10.9%	16.0%	17.9%	19.4%	19.9%	20.1%	20.6%	21.0%	21.3%	22.9%
12			9.0%	14.4%	17.0%	17.9%	18.5%	18.6%	19.2%	19.5%	19.9%
13				9.3%	14.5%	16.6%	17.0%	17.2%	17.5%	17.8%	17.9%
14					9.5%	14.0%	15.7%	16.5%	16.7%	17.0%	17.1%
15						8.8%	13.1%	14.6%	15.3%	15.4%	15.5%

16							8.5%	12.2%	13.5%	14.1%	14.1%
17								8.1%	11.9%	13.4%	13.6%
18									7.4%	10.6%	11.4%
19										6.2%	8.5%
20											4.9%

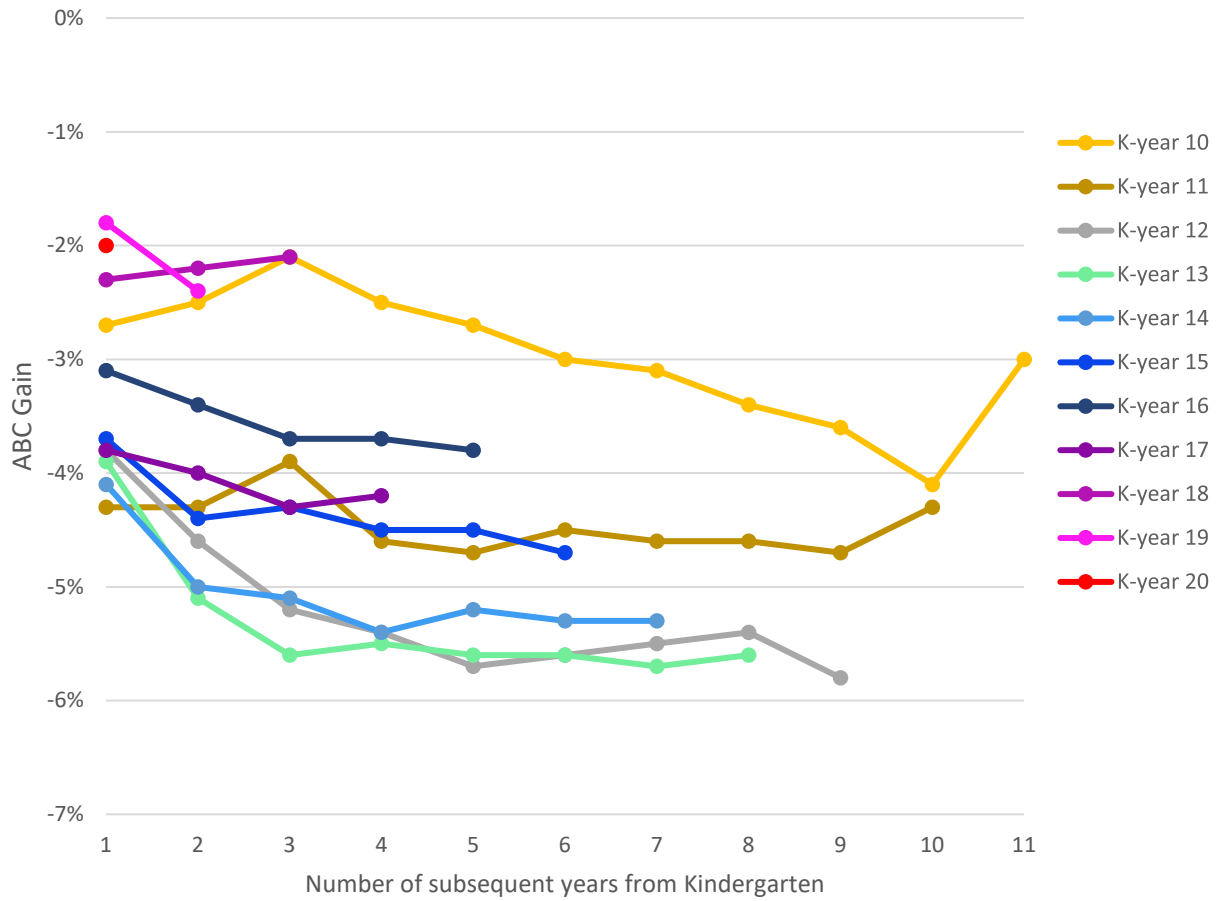
ABC Gain – Yearly Net Retention Percentage for Direct Certification plus Free Meals vs. No Known Pre-K
(Rows: Kindergarten year; Columns: subsequent years)

FY	11	12	13	14	15	16	17	18	19	20	21
10	-2.7%	-2.5%	-2.1%	-2.5%	-2.7%	-3.0%	-3.1%	-3.4%	-3.6%	-4.1%	-3.0%
11		-4.3%	-4.3%	-3.9%	-4.6%	-4.7%	-4.5%	-4.6%	-4.6%	-4.7%	-4.3%
12			-3.8%	-4.6%	-5.2%	-5.4%	-5.7%	-5.6%	-5.5%	-5.4%	-5.8%
13				-3.9%	-5.1%	-5.6%	-5.5%	-5.6%	-5.6%	-5.7%	-5.6%
14					-4.1%	-5.0%	-5.1%	-5.4%	-5.2%	-5.3%	-5.3%
15						-3.7%	-4.4%	-4.3%	-4.5%	-4.5%	-4.7%
16							-3.1%	-3.4%	-3.7%	-3.7%	-3.8%
17								-3.8%	-4.0%	-4.3%	-4.2%
18									-2.3%	-2.2%	-2.1%
19										-1.8%	-2.4%
20											-2.0%

Lower rates of retention are observed for ABC for Direct Certification and Free meal status in all years after the first year of kindergarten when compared to No Known Pre-K for Direct Certification and Free meal students. There is not a consistent increase or decrease in the number of students retained year to year because students may not be enrolled in DESE schools in subsequent years.

Students who transfer out of DESE schools are not included in those years without DESE enrollment but may return in future years to be counted again. Formerly retained students are not counted as retained in any year they have been promoted to their on-time grade level, based upon their kindergarten fiscal year.

ABC Retention Gain by Kindergarten Year (Direct Certification plus Free Meals vs. No Known Pre-K)



PERSISTENCE

Section Highlights

- Among Direct Certification plus Free meals students, those who participated in ABC had 3.6 to 12.2 percentage points higher statewide persistence rates compared to No Known Pre-K Direct Certification plus Free meals. There was no significant difference between all students and ABC Direct Certification plus Free meals calculations for persistence in the state.

Another metric for longitudinal analysis in student attendance may be defined as persistence. The persistence of student enrollment is the consecutive years of enrollment in Arkansas public schools through elementary and secondary grade levels. The percentage of students returning to public school in Arkansas each year varies based upon the needs and capabilities of each household. The core comparison groupings for ABC and No Known Pre-K ensure that the socio-economic characteristics are equivalent for Direct Certification and Free meal status student households in the persistence comparison.

A simple calculation for the percentage of students who remain in Arkansas each year, without having any years absent from the Arkansas public school system, essentially provides the enrollment equivalent of perfect attendance. Rather than requiring that a student is present all days of the school year, the persistence measure only requires that the student is enrolled in the state. Official calculations for dropout rate do not identify students who may not persist through elementary and early secondary grade levels to receive quality education even prior to high school.

There are many valid reasons for transferring out of Arkansas public schools, however, there are also reasons which do not ensure the continued education of the student. Households who are at risk socio-economically may be more likely to fail to provide adequate education, even for elementary students. There is no official dropout rate for elementary school, however, it would be impractical to assume that all students are finishing a quality education elsewhere whenever they are removed from Arkansas public schools at any age.

Enrollment records for all kindergarten students identified in the research data provided have been analyzed to determine the percentage of students who remain enrolled in Arkansas public schools in subsequent years, as well as the percentage who remain in the same county. The calculation for the percentage of students who remain in the same school district would require significant effort due to the school LEA updating which occurred throughout the past eleven years. Additionally, school districts which closed, consolidated, or otherwise received a changed district LEA value would need to be accounted separately. The identification of the percentage of students remaining in the same county does not have these limitations because the LEA county digits do not change when the school district is renumbered. The core comparison groups for ABC and No Known Pre-K have been isolated and reported in comparison to each other and to the entire population of kindergarten students in the longitudinal data.

IN-STATE PERSISTENCE – CORE COMPARISON

Kindergarten students remaining in Arkansas public schools

ABC – Direct Certification and Free Lunch Kindergarten students remaining in Arkansas public schools

K FY	Years	K Students	Persistent	Percentage
10	12	7,098	5,440	76.6%
11	11	7,391	5,847	79.1%
12	10	6,977	5,806	83.2%
13	9	8,032	6,743	84.0%
14	8	7,876	6,606	83.9%
15	7	8,174	7,015	85.8%
16	6	8,804	7,795	88.5%
17	5	9,130	8,163	89.4%
18	4	8,626	7,884	91.4%
19	3	8,485	7,994	94.2%
20	2	8,953	8,655	96.7%
21	1	8,619	8,619	100.0%

No Known Pre-K – Direct Certification and Free Lunch Kindergarten students remaining in Arkansas public schools

K FY	Years	K Students	Persistent	Percentage
10	12	6,544	4,387	67.0%
11	11	5,294	3,656	69.1%
12	10	6,006	4,267	71.0%
13	9	6,895	5,100	74.0%
14	8	6,850	5,217	76.2%
15	7	6,975	5,429	77.8%
16	6	7,025	5,707	81.2%
17	5	6,650	5,427	81.6%
18	4	7,130	6,070	85.1%
19	3	7,106	6,347	89.3%
20	2	7,629	7,104	93.1%
21	1	6,361	6,361	100.0%

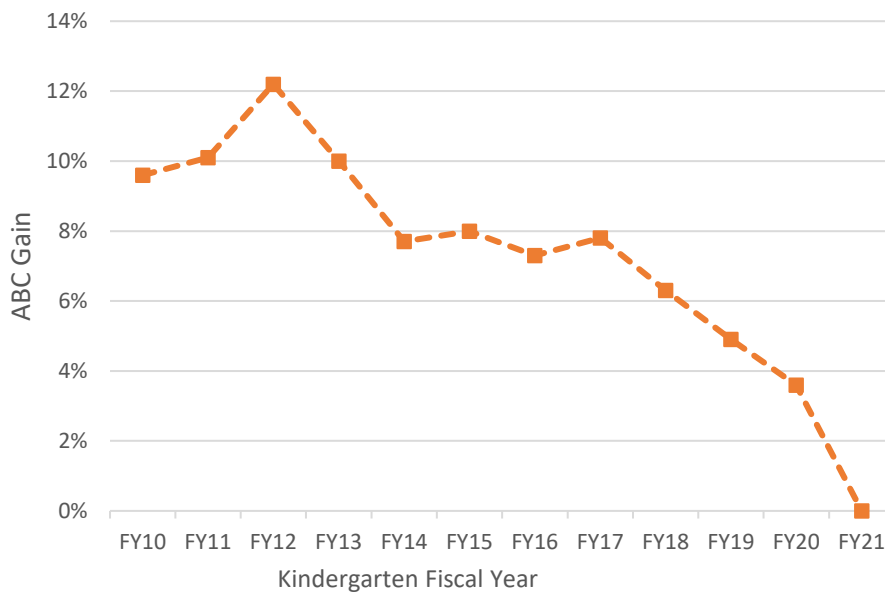
Persistence In-State - ABC Gain – Direct Certification and Free Lunch Kindergarten students remaining in Arkansas public schools vs. No Known Pre-K

K FY	Years	ABC	NK	ABC Gain
10	12	76.6%	67.0%	9.6%
11	11	79.1%	69.1%	10.1%
12	10	83.2%	71.0%	12.2%
13	9	84.0%	74.0%	10.0%

14	8	83.9%	76.2%	7.7%
15	7	85.8%	77.8%	8.0%
16	6	88.5%	81.2%	7.3%
17	5	89.4%	81.6%	7.8%
18	4	91.4%	85.1%	6.3%
19	3	94.2%	89.3%	4.9%
20	2	96.7%	93.1%	3.6%
21	1	100.0%	100.0%	0.0%

While there is no significant difference between all students and ABC Direct Certification plus Free meals calculations for persistence in the state, there is a difference of 3.6 to 12.2 percent for ABC when compared to No Known Pre-K Direct Certification plus Free meals. The difference identified for FY10 to FY21 may correspond to a higher percentage of students continuing to receive quality education within lower socio-economic households.

ABC Persistence Gain (Among Direct Certification plus Free Meals)



DATA QUALITY NOTES

NOTES ON APPARENT ROUNDING ERRORS

Throughout this analysis, calculations have been rounded to the nearest whole number, percentage, or to the nearest tenth, for smaller calculated values. This rounding produces apparent errors.

ROW	ABC	Non-ABC	ABC Gain
1	10.7	10.7	+0.0
2	10.4	10.1	+0.3
3	9.2	9.2	+0.1
4	10.1	10.1	-0.1

In the table above, the ABC Gain column is a simple difference calculated between the ABC column and the Non-ABC column. For the first two rows of calculations, ABC Gain matches the expected values when subtracting Non-ABC from ABC. In the third row, the reported ABC Gain is +0.1, while the individual values for ABC and Non-ABC are both reported as 9.2. As a result, the expected ABC gain would be 0.0, rather than +0.1. Rounding to the nearest tenth obscures the actual values for ABC of 9.234 and Non-ABC of 9.177. Both of these values do round to 9.2, however, the difference in the actual values is 0.057. Because 9.234 minus 9.177 is 0.057, when rounded to the nearest tenth, is reported as +0.1. Similarly, the fourth row would have an expected ABC Gain of 0.0, rather than -0.1 as reported, because both ABC and Non-ABC are rounded to 10.1. The actual values for ABC and Non-ABC are 10.052 and 10.104, respectively. The calculated difference is -0.052, which, rounded to the nearest tenth, is -0.1.

NOTES ON EXCLUDED DATA

Certain records have been excluded in the analysis when one or more of the following is observed:

- Fiscal years prior to kindergarten when the Research ID is associated with a higher DESE grade level
 - o DESE research ID application may inadvertently combine records for two students under the same research ID.
- Kindergarten students without a corresponding enrollment record in Cycle 2 (Oct. 15), indicating the student was not enrolled before October 1.
- Attendance which exceeds 178 days present per academic year.
 - o Calculated days present is limited to 178, rather than higher values in the data provided.

NOTES ON PROFICIENCY CALCULATIONS

The calculations for proficiency in this analysis will not match the official proficiency reporting for Arkansas because the kindergarten research data forms the basis of the students selected. In the third grade, proficiency has been calculated within this report for only those students who attended a DESE school in kindergarten, not for all third grade students. Official reporting for proficiency for all Arkansas students exceeds the scope of this analysis, which is focused upon ABC Pre-school participation and comparison groups of Arkansas kindergarteners.

The longitudinal aspect of this analysis extends to proficiency on assessments in later years and grade levels, but this analysis does not extend to Arkansas students beyond the established starting point with kindergarten data.

The assessment data provided for this research includes a proficiency level data element with values of L1, L2, L3, and L4. Proficiency calculations in this analysis include L3 and L4 as proficient level outcomes. Students with L1 and L2 proficiency levels are not proficient, in these calculations.

NOTES ON GENERAL CALCULATIONS

As each level of detail and outcome is analyzed when working from provided research data sets, there is a potential for apparent conflicting results of calculations from the same data. More specifically, the denominator in a calculation of percentage may vary, but also remain valid, depending upon the intent of the measure.

For example, suppose 10,000 students attend kindergarten in FY15 with certain characteristics in common. When evaluating FY16 outcomes, the denominator may be 10,000, to indicate what percentage of students have a particular outcome, or the denominator could be 8,500, if 1,500 of the students did not attend schools within the data set during FY16. In both cases, the numerator would remain the same, such as 5,000 positive outcomes identified, but the resulting percentages would have an apparent conflict. If all 10,000 students from the FY15 basis are used in the denominator, the result would be 50% ($5,000/10,000$). If only those students who also attended in FY16 are used in the denominator, the result would be 58.8% ($5,000/8,500$). While both calculations use the same data sets, both use 5,000 in the numerator, neither the 50% nor the 58.8% percentage reported is necessarily incorrect, but an apparent conflict exists.

In another example, the calculation for percentage of proficient students may be impacted by traits of the data values. Again suppose 10,000 students attend kindergarten in FY15 with certain characteristics in common. An evaluation of the proficiency of those students in on a third grade assessment in FY18 could reveal 6,000 proficient students, among 8,000 tested. One calculation for proficiency would be 75% ($6,000/8,000$). However, students who were retained between FY15 and FY18 would not yet be in the third grade and would not have been tested.

It may be appropriate to include retained students in the denominator because they are not proficient at the third grade level, having been retained (held back) and remaining in kindergarten, first grade, or second grade, while their kindergarten peers were tested at the third grade level. If 800 students had been retained between FY15 and FY18, while remaining in schools included in the analysis, the proficiency rate would be 68.2% ($6,000/8,800$), rather than the 75% previously calculated.

The examples provided demonstrate how the denominator may vary while the numerator remains the same. There are equally valid reasons for the numerator to vary as well. The calculation for percentage of proficient students in third grade in FY18 may also include students who are proficient in the fourth grade, if there are students who advanced (skipped) a grade between FY15 and FY18. Those fourth grade students belong to the same FY15 kindergarten group and are also proficient at the third grade level (because they are proficient above the third grade level).

All these examples do not provide the same answer, but each is correct for the calculation it represents. The appropriateness of the measured result is dependent upon the intention of the analysis, and the reasons should be understood for any differences.



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